

# KANSAS UNIFIED WATERSHED ASSESSMENT FFY 1999



October 1, 1998



*Kansas Department*  
*USDA*  
*Natural Resources* *Health &*  
*Conservation Service*  
*Environment*

# **Final**

## **Kansas Unified Watershed Assessment**

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### **Questions or Comments**

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# Kansas Unified Watershed Assessment

October 1, 1998

This document is the final Unified Watershed Assessment called for by the *Clean Water Action Plan*. Preparation of the Kansas Unified Watershed Assessment was facilitated by the Kansas Department of Health and Environment and the United States Department of Agriculture - Natural Resources Conservation Service. During the month of July, the advice and counsel of many federal, state, local and tribal agencies was obtained through meetings and personal correspondence.

Assessment coordinators met with the EPA Region VII Indian Coordinator and representatives of the Kickapoo Indian Tribe and the Prairie Band of Potawatomi Indians on July 14, 1998. The Kickapoo Environmental Office provided water quality data collected from streams on Kickapoo Land. The Potawatomi land use plan was reviewed. The cooperation and assistance of the Kickapoo and Potawatomi is acknowledged and appreciated.

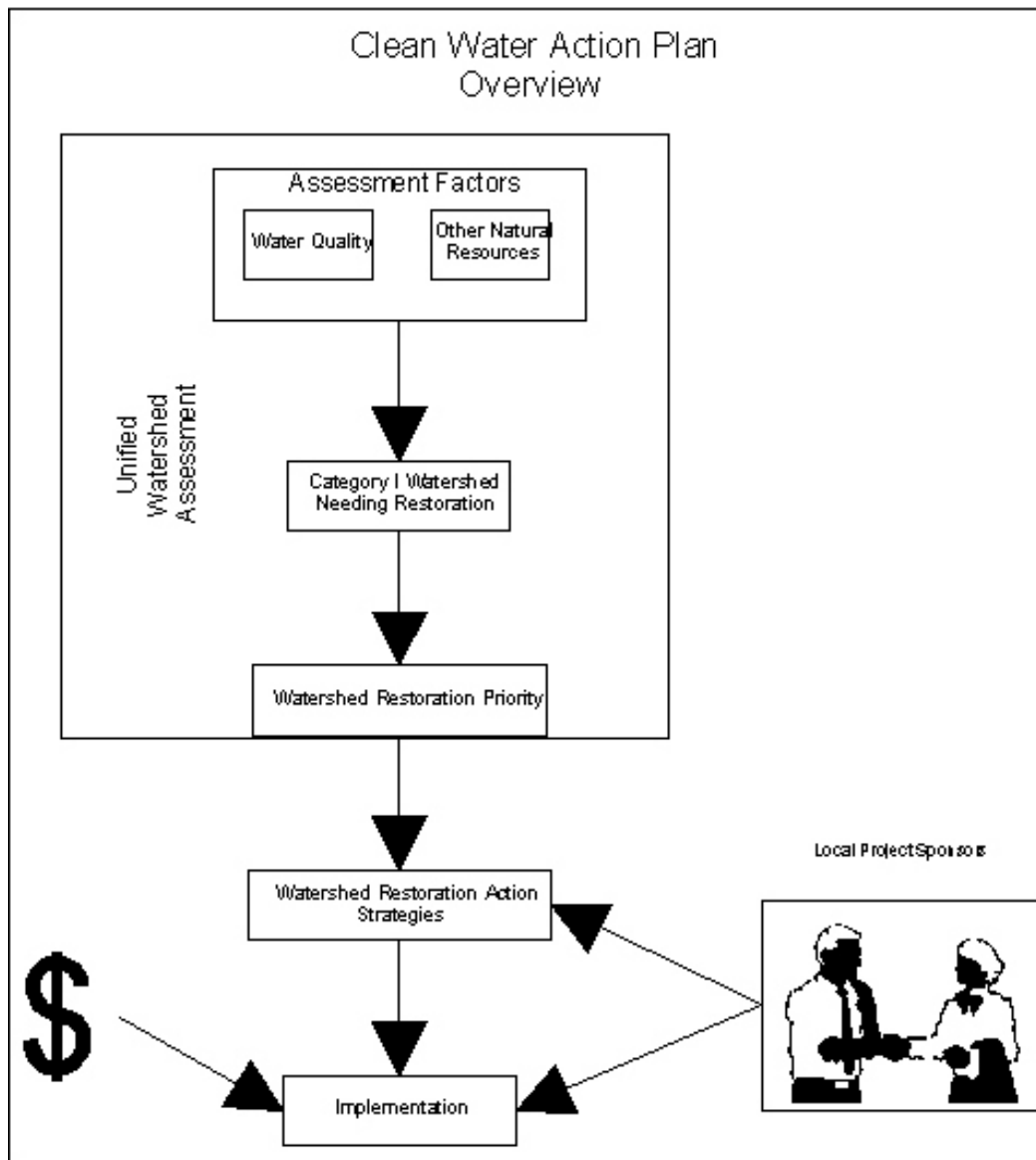
The assistance of the Kansas Department of Wildlife and Parks, the United States Fish and Wildlife Service and the Kansas Biological Survey is especially acknowledged. The draft assessment report was released August 1, 1998. It was presented at public meetings held in Hays (August 5, 1998) and Manhattan (August 11, 1998). In addition to the public meetings the assessment was distributed by mail to the USDA - State Technical Committee and presented to a number of organizations and individuals. Over 300 copies of the draft assessment were distributed for review and comment.

The *Clean Water Action Plan* is a blueprint for restoring and protecting the nation's water resources. The plan identifies 111 key action items for restoration and protection of water resources. The plan was prepared through a collaborative effort of nine federal water and natural resource management agencies. The U.S. Environmental Protection Agency and the U.S. Department of Agriculture lead the development of the plan.

The Unified Watershed Assessment is a key action item of the *Clean Water Action Plan*. The *Clean Water Action Plan* anticipates that additional federal funds will be provided in Federal Fiscal Year 1999 (starting October 1, 1998) for implementation of **watershed restoration action strategies**. Refer to Figure 1 for an overview of the relationships between the unified watershed assessment, watershed restoration action strategies and implementation. The *Clean Water Action Plan* requests the state environmental agency and the state conservationist accept leadership responsibility for completing the Unified Watershed Assessment.

The Unified Watershed Assessment brings the variety of water quality and natural resource condition assessment tools federal and state agencies are now using into a single unified assessment. The assessment will classify the nation's watersheds into four categories. Category I is watersheds in need of restoration. Category II is watersheds in need of protection. Category III is watersheds with pristine or sensitive aquatic system conditions on lands administered by federal, state, or tribal governments. Category IV watersheds are those for which there is insufficient data to make an accurate classification. Table 1 summarizes the guidance provided

Figure 1



**Table 1**

**Kansas Clean Water Action Plan Guidance for Watershed Classification**

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<b>Category I Watersheds in Need of Restoration</b> (p 6; Unified Watershed Assessment Framework)		
Directive	Implementation	Lead
1. Nonattainment of national clean water action goals (including exceedances of state or tribal water quality standards, or impaired drinking water sources, etc.)	<p>Kansas' 1998 Water Quality Limited Segments - 303d List.</p> <p>Either of the following --</p> <ul style="list-style-type: none"> <li>▶ <b>Table 1. Water Quality Limited Stream Segments</b> If 25 % of stream miles of HUC on 303d list</li> <li>▶ <b>Table 4 List of Water Quality Limited Lakes</b> If lake watershed comprises majority of HUC 8.</li> </ul>	Kansas Department of Health & Environment
2. Nonattainment of natural resource goals related to aquatic systems, including goals related to habitat, ecosystem health and living resources.	<p>Evaluation matrix consisting of -- Index of Biological Integrity Score (IBI Score &lt; 70 indicates impairment), Riparian Area Condition Score, Threatened and Endangered Species, Riparian Impact, Stream Impact and water quality impact (303d Listed).</p> <p>Either of the following --</p> <ul style="list-style-type: none"> <li>▶ Aquatic or riparian T&amp;E or SINC present and watershed has stream impact, riparian impact, or water quality impact.</li> <li>▶ 3 of 6 evaluation factors present.</li> </ul>	Kansas Department of Wildlife & Parks
3. Other measures and indicators of degraded aquatic system conditions (wetland condition, loss rates; percent impervious surface; other measures of aquatic habitat.		U.S. Fish & Wildlife Service
4. Decline in condition of living and natural resources that are part of watershed aquatic system (decline in population of rare and endangered aquatic species, decline in healthy populations of fish and shellfish, etc.		Kansas Biological Survey

Category II Watersheds Meeting Goals, Including Those Needing Action to Sustain Water Quality (p 7; Unified Watershed Assessment Framework)		
1. Meeting national clean water goals.	20% or more of HUC stream miles assessed & < 25% of stream miles on 303d list.	
2. Meeting natural resource goals.	IBI > 70, scores for each evaluation factor and two or fewer impairment conditions.	
3. Other indicators of aquatic system condition		
Category III Watersheds with Pristine or Sensitive Aquatic System Conditions on Lands Administered by Federal, State and Tribal Governments (p 7; Unified Watershed Assessment Framework)		
Designated & candidate 1. Wilderness areas 2. Outstanding Natural Resource Waters 3. Wild & Scenic Rivers	Data not available at this time.	
Category IV Watersheds with Insufficient Data to Make Assessment (p 8; Unified Watershed Assessment Framework)		
Clean water goals	Watersheds with less than 20% of total stream miles assessed	Kansas Department of Health & Environment
Other natural resource goals	Watershed that could not be classified Category I or II.	Kansas Department of Wildlife & Parks  U.S. Fish & Wildlife Service  Kansas Biological Survey

by the *Clean Water Action Plan* and the *Unified Watershed Assessment Framework Document* and how this guidance was used to prepare the Kansas' assessment.

A Category I watershed does not meet state water quality standards or fails to achieve aquatic system goals related to habitat and ecosystem health. Category I watersheds are also assigned a priority for watershed restoration. This priority will be used to direct new federal funding being proposed for watershed restoration work. The federal fiscal year 1999 budget request to implement the Clean Water Action Plan is \$568 million.

## **Public Comment and Recommendations**

The draft unified watershed assessment was presented at two public meetings in early July. In addition, opportunities to make presentations to meetings organized of other purposes were used to solicit input. Over 300 copies of the draft assessment were distributed via meetings and direct mail.

The most significant comments received addressed:

1. The correctness of the classification of some watersheds, specifically watersheds 10260011 - Upper North Fork Solomon, 10260013 - Upper South Fork Solomon and 11030014 - North Fork Ninnescah.
2. Fiscal year 1999 - 2000 funding priorities were not clearly described.
3. Watershed restoration priority scoring system did not fairly consider "other resources".
4. Coordination with tribes and other states was not documented.
5. Consider also using Table 2 Water quality limited stream segments identified by biological monitoring from the 1998 Kansas Water Quality Limited Segments - 303d List.

## **Results of the Assessment**

Water quality assessment data provided by the *1998 Kansas Water Quality Limited Segments, 303d List* prepared by the Kansas Department of Health and Environment was used as the basis of determining watershed water quality impairments. Nonattainment of other natural resource goals and objectives was determined by a committee comprised of representatives of the Kansas Department of Wildlife and Parks, the United States Fish and Wildlife Service and the Kansas Biological Survey.

A total of 92 HUC - 8 watersheds were examined. Seventy-one (77 %) are classified Category I, nine (about 10 %) are classified Category II and twelve (13 %) are classified Category IV. The average size of a HUC - 8 watershed is 885 square miles. Category I watersheds cover about 83

% of the total area of the state, Category II watersheds cover about 10 % of the state's area and Category IV covers about 7 % of the state's area.

The draft assessment classified a total of sixty watersheds as Category I. The final assessment places 71 watersheds in Category I. The changes were the result of --

1. Changing the threshold for fraction of watersheds assessed from 50 % to 20%. The draft assessment required 50 % of watershed "waters" be assessed to be considered for Category I or Category II. Guidance provided by the Unified Watershed Assessment Framework Document (page 9) suggests that 20 to 25% of the watershed waters is adequate to classify the watershed. One watershed from Category IV (10260005) was added to Category I as a result. This change also reclassified two Category IV watersheds (11030005 & 11040006) to Category II.
2. Table 4 - List of water quality limited lakes; 1998 Kansas Water Quality Limited Segments - 303d List was also reviewed. Where the watershed of a lake comprised a significant fraction of the total HUC 8 watershed area, lake water quality impairments were used to classify the watershed as Category I. This resulted in adding two watersheds - (10260013 and 11030014) to Category I. Table 4 reported Webster Lake and Cheney Lake to be eutrophic.
3. The Unified Watershed Assessments of Colorado, Missouri, Oklahoma, and Nebraska were reviewed. Seven watersheds (, 10250002, 10250004, 10250009, 10270206, 10290108 and 11070206) were changed from Category IV to Category I and one (11020009) was changed from Category II to Category I.

Table 2 -Water quality limited stream segments identified by biological monitoring from the 1998 Kansas Water Quality Limited Segments - 303d List was reviewed. Of the 13 watersheds reported in Table 2, only one (11060001) had not been classified Category I through other assessment methods. Table 2 would add only a few miles of the Arkansas River to the impaired status and was not sufficient to reach the threshold of 25 % of HUC stream miles to assign the watershed to Category I. The classification of this watershed remained Category II.

Kansas has no Category III watersheds. Small parcels of federal, state and tribal managed land are scattered throughout Kansas. These land holdings are not large enough to comprise a significant fraction of a HUC 8 watershed. Identification and assessment of these land parcels will take place as watershed restoration action strategies are prepared.



Table 2 - Kansas Unified Watershed Assessment

<b>Hydrologic Catalog Unit (HUC)</b>	<b>Name</b>	<b>Unified Watershed Classification</b>	<b>Basis of Category I UWA classification</b>
10240005	TARKIO-WOLF	Category I	Both
10240007	SOUTH FORK BIG NEMAHA	Category I	Both
10240008	BIG NEMAHA	Category I	Water Quality
10240011	INDEPENDENCE-SUGAR	Category I	Other Resources
10250001	ARIKAREE	Category I	Water Quality
10250002	NORTH FORK REPUBLICAN	Category I	CO, NB Consistency
10250003	SOUTH FORK REPUBLICAN	Category II	-
10250004	UPPER REPUBLICAN	Category I	NB Consistency
10250009	Harlan Co (Neb) Res. - KS	Category I	NB Consistency
10250010	UPPER SAPPAS	Category IV	-
10250011	LOWER SAPPAS	Category II	-
10250012	SOUTH FORK BEAVER	Category IV	-
10250013	LITTLE BEAVER	Category IV	-
10250014	BEAVER	Category I	Water Quality
10250015	PRAIRIE DOG	Category I	Water Quality
10250016	MIDDLE REPUBLICAN - west	Category IV	-
10250016	MIDDLE REPUBLICAN - east	Category I	Both
10250017	LOWER REPUBLICAN	Category I	Both

10260001	SMOKY HILL HEADWATERS	Category I	Other Resources
10260002	NORTH FORK SMOKY HILL	Category IV	-
10260003	UPPER SMOKY HILL	Category I	Both
10260004	LADDER	Category I	Both
10260005	HACKBERRY	Category I	Water Quality
10260006	MIDDLE SMOKY HILL	Category I	Other Resources
10260007	BIG	Category I	Water Quality
10260008	LOWER SMOKY HILL	Category I	Both
10260009	UPPER SALINE	Category I	Other Resources
10260010	LOWER SALINE	Category I	Water Quality
10260011	UPPER NORTH FORK SOLOMON	Category II	-
10260012	LOWER NORTH FORK SOLOMON	Category I	Water Quality
10260013	UPPER SOUTH FORK SOLOMON	Category I	Water Quality
10260014	LOWER SOUTH FORK SOLOMON	Category I	Water Quality
10260015	SOLOMON RIVER	Category I	Water Quality
10270101	UPPER KANSAS	Category I	Both
10270102	MIDDLE KANSAS	Category I	Both
10270103	DELAWARE	Category I	Both
10270104	LOWER KANSAS	Category I	Both
10270205	LOWER BIG BLUE	Category I	Both
10270206	UPPER LITTLE BLUE	Category I	NB Consistency

10270207	LOWER LITTLE BLUE	Category I	Water Quality
10290101	UPPER MARAIS DES CYGNES	Category I	Both
10290102	LOWER MARAIS DES CYGNES	Category I	Other Resources
10290103	LITTLE OSAGE	Category I	Both
10290104	MARMATON	Category I	Both
10290108	SOUTH GRAND	Category I	MO Consistency
10300101	LOWER MISSOURI-CROOKED	Category I	Both
11020009	Upper Arkansas John Martin	Category I	CO Consistency
11030001	MIDDLE ARKANSAS-LAKE MCKINNEY	Category I	Other Resources
11030002	WHITEWOMAN	Category IV	-
11030003	ARKANSAS-DODGE CITY	Category I	Water Quality
11030004	ARKANSAS-PICKEREL	Category I	Other Resources
11030005	PAWNEE	Category II	-
11030006	BUCKNER	Category I	Water Quality
11030007	UPPER WALNUT CREEK	Category I	Water Quality
11030008	LOWER WALNUT CREEK	Category II	-
11030009	RATTLESNAKE	Category I	Both
11030010	GAR-PEACE	Category I	Both
11030011	COW	Category I	Water Quality
11030012	LITTLE ARKANSAS	Category I	Both

11030013	MIDDLE ARKANSAS-SLATE	Category I	Both
11030014	NORTH FORK NINNESCAH	Category I	Water Quality
11030015	SOUTH FORK NINNESCAH	Category I	Other Resources
11030016	NINNESCAH	Category II	-
11030017	UPPER WALNUT RIVER	Category I	Both
11030018	LOWER WALNUT RIVER	Category I	Both
11040002	UPPER CIMARRON	Category IV	-
11040003	NORTH FORK CIMARRON	Category IV	-
11040004	SAND ARROYO	Category IV	-
11040005	BEAR	Category IV	-
11040006	UPPER CIMARRON-LIBERA L	Category II	-
11040007	CROOKED	Category I	Both
11040008	UPPER CIMARRON-BLUFF	Category I	Other Resources
11050001	LOWER CIMARRON-EAGLE CHIEF	Category IV	-
11060001	KAW LAKE	Category II	-
11060002	UPPER SALT FORK ARKANSAS	Category I	Both
11060003	MEDICINE LODGE	Category I	Other Resources
11060004	LOWER SALT FORK ARKANSAS	Category I	Water Quality
11060005	CHIKASKIA	Category I	Both
11070101	UPPER VERDIGRIS	Category I	Both

11070102	FALL	Category I	Other Resources
11070103	MIDDLE VERDIGRIS	Category I	Both
11070104	ELK	Category I	Other Resources
11070106	CANEY	Category II	-
11070201	NEOSHO HEADWATERS	Category I	Both
11070202	UPPER COTTONWOOD	Category I	Both
11070203	LOWER COTTONWOOD	Category I	Other Resources
11070204	UPPER NEOSHO	Category I	Both
11070205	MIDDLE NEOSHO	Category I	Other Resources
11070206	LAKE O' THE CHEROKEES (West)	Category I	OK Consistency
11070206	LAKE O' THE CHEROKEES (East)	Category I	Water Quality
11070207	SPRING	Category I	Both
11100102	Middle Beaver, KS	Category IV	-

### Summary of Federal, State and Tribal Land Holdings in Kansas

<b>Name</b>	<b>Owner</b>	<b>Watersheds</b>
Cheyenne Bottoms Wildlife Area	State	11030011
Cimarron National Grassland	Federal	11040002, 11040003
Flint Hills National Wildlife Refuge	Federal	11070201, 11070204, 11070205
Ft. Riley	Federal	10250017, 10270101, 10270205
Kickapoo Indian Nation	Tribal	10270103
Kirwin National Wildlife Refuge	Federal	10260011, 10260012
Marais des Cygnes National Wildlife Refuge	Federal	10290101, 10290102
Prairie Band of Potawatomi Indians Indian	Tribal	10270102, 10270103
Quivera National Wildlife Refuge	Federal	11030009, 11030014, 11030015
Smoky Hill ANG Range	Federal	10260008, 10260010

### Watershed Restoration Action Strategies

Category I watersheds were assigned a watershed restoration priority score based on the following nine components -- Total Maximum Daily Load schedule, KDHE sponsored nonpoint source water quality protection - restoration project in progress, implementation of Conservation District Local Nonpoint Source Pollution Management Plan, Kansas Water Quality Action Targeting System (KATS) score, Severity of water quality impairment, local conservation leadership, US Fish and Wildlife Service Priority Watershed Table, sheet and rill erosion - sedimentation rate; and economic, social and environmental justice. See Table 3 for a detailed description of the priority scoring system.

While comments were received concerning how well the priority system addressed “other resources”, no changes were made to the priority system. No comments were received concerning the outcome of the priority ranking.

Priorities for funding restoration action was not addressed by the draft assessment. Funding priority for federal fiscal years 1999, 2000 and 2001 has been identified in the final assessment.

Category I watersheds and watershed restoration priority and anticipated fiscal year funding priority is summarized on Table 4 and Figure 2.

**Table 3**  
**Clean Water Action Plan**  
**Watershed Restoration Priority Scoring System**

wrpfnl.cwa

Key Action No. 95 (p 78, CWAP) States and tribes work with agencies, organizations and public to define watershed restoration priorities.					
Kansas used the following formula to calculate a watershed restoration priority score (WRPS) WRPS=TMDL + NPSK + NPSS + KATS + WQI + LCL + PWT + SRE + SEI					
Priority Element	Directive (p 15, Framework)	Implementation	Priority Points	Lead	
TMDL	Total Maximum Daily Load (TMDL) schedule	By 6/30/99 Kansas Lower Republican Basin	3	KDHE	
		By 6/30/2000 Up. & Lower Arkansas Basin Cimarron Basin	2		
		By 6/30/2001 Maris des Cygnes Basin Missouri Basin	1		
	EQIP Priority Watersheds	Not directly used, see <b>Other - Local Conservation Leadership</b>		NRCS	
NPSK	State Nonpoint Source Program	Watershed demonstration project protecting public drinking water supply funded with state or EPA Section 319 Nonpoint Source Grant	2	KDHE	
NPSS		Implementation of Conservation District Local Nonpoint Source Pollution Management Plan based on receipt Kansas Nonpoint Source Pollution Implementation Funds from the Kansas State Water Plan.		SCC	
		Greater than 75 % of HUC 8 watershed			3
		Greater than 50 % and less than 75 % of HUC 8 watershed			2
		Less than 50 % of HUC 8 watershed			1
	Source Water Assessment & Protection	Indirectly considered with Kansas Water Quality Action Target Score (KATS) - see “Other”		KDHE	

**Table 3 - Priority Scoring System for Watershed Restoration Action - 8/25/98**

	Interagency Abandoned Mine Land Management Initiative	Not used	KDHE - SMS
	Protection & Restoration of Tribal Trust Resources	No data available	
<b>Other</b>			
<b>KATS</b>	<b>Kansas Water Quality Action Target Score (KATS).</b>	Indexing. scheme developed to identify Kansas' valuable and vulnerable water resources. To arrive at score, the KATS procedure calculates a score for watershed groundwater water value, surface water value and water vulnerability. KATS surface water value points are based on drinking water, agricultural and industrial water supplies, aquatic life support and water recreation.	KDHE
		KATS > 2.8	
		KATS < 2.8 and >2	
		KATS < 2	
<b>WQI</b>	<b>Severity of Water Quality Impairment,</b>	Based on 303d list, % of HUC stream miles on 303d list.	KDHE
		> 40 % HUC miles impaired	
		> 20 % and < 40% miles impaired	
		< 20 % miles impaired	
<b>LCL</b>	<b>Local Conservation Leadership</b>	Derived an index consisting of organized watershed districts, EQIP priority areas and Conservation Reserve Program Conservation Reserve Priority Area. One priority point for each factor present	NRCS
		Three factors present	
		Two of 3 factors present	
		One factor present.	

**Table 3 - Priority Scoring System for Watershed Restoration Action - 8/25/98**



PWT	Priority Watershed Table	List of 32 watersheds identifying federal and state threatened and endangered species present and wildlife refuges. Watersheds were listed in three priority groups.		FWS
		Priority Group 1	3	
		Priority Group 2	2	
		Priority Group 3	1	
SRE	Sheet & Rill Erosion - Sedimentation Rate	Erosion data from <i>National Resource Inventory, 1992</i> . HUC - 8's ordered from highest to lowest erosion rate. Used the 38 HUC's which had statistically significant erosion rate data.		NRCS
		Top third of list	3	
		Middle third of list	2	
		Bottom third of list	1	
SEI	Economic, Social & Environmental Justice	Derived HUC - 8 <b><i>Socioeconomic Index (SEI)</i></b> based on county poverty rate rank and minority population rank. Data obtained from <i>Health and Social Factors in Kansas, A Data and Chartbook 1997-1998</i> compiled by Kansas Health Institute.		KDHE
		SEI <2	3	
		SEI = 2	2	
		SEI > 2	1	
		<b>Priority Scoring Procedure</b> 1. Each Category I watershed is assigned priority score for each of the 9 priority elements listed above.  2. Total points for each priority element are summed.  3. Watersheds are listed in order of number of priority points.  4. Ties in priority points were broken by placing ties in descending order of percent of stream miles with water quality impairments.  5. Final <b>Watershed Restoration Priority</b> based on resulting watershed rank order.		
FWS		United States Fish and Wildlife Service		

Table 3 - Priority Scoring System for Watershed Restoration Action - 8/25/98

<b>KDHE</b>	Kansas Department of Health and Environment
<b>KDHE - SMS</b>	Kansas Department of Health and Environment - Surface Mining Section
<b>NRCS</b>	United States Department of Agriculture - Natural Resources Conservation Service
<b>SCC</b>	State Conservation Commission (Kansas)

**Table 3 - Priority Scoring System for Watershed Restoration Action - 8/25/98**

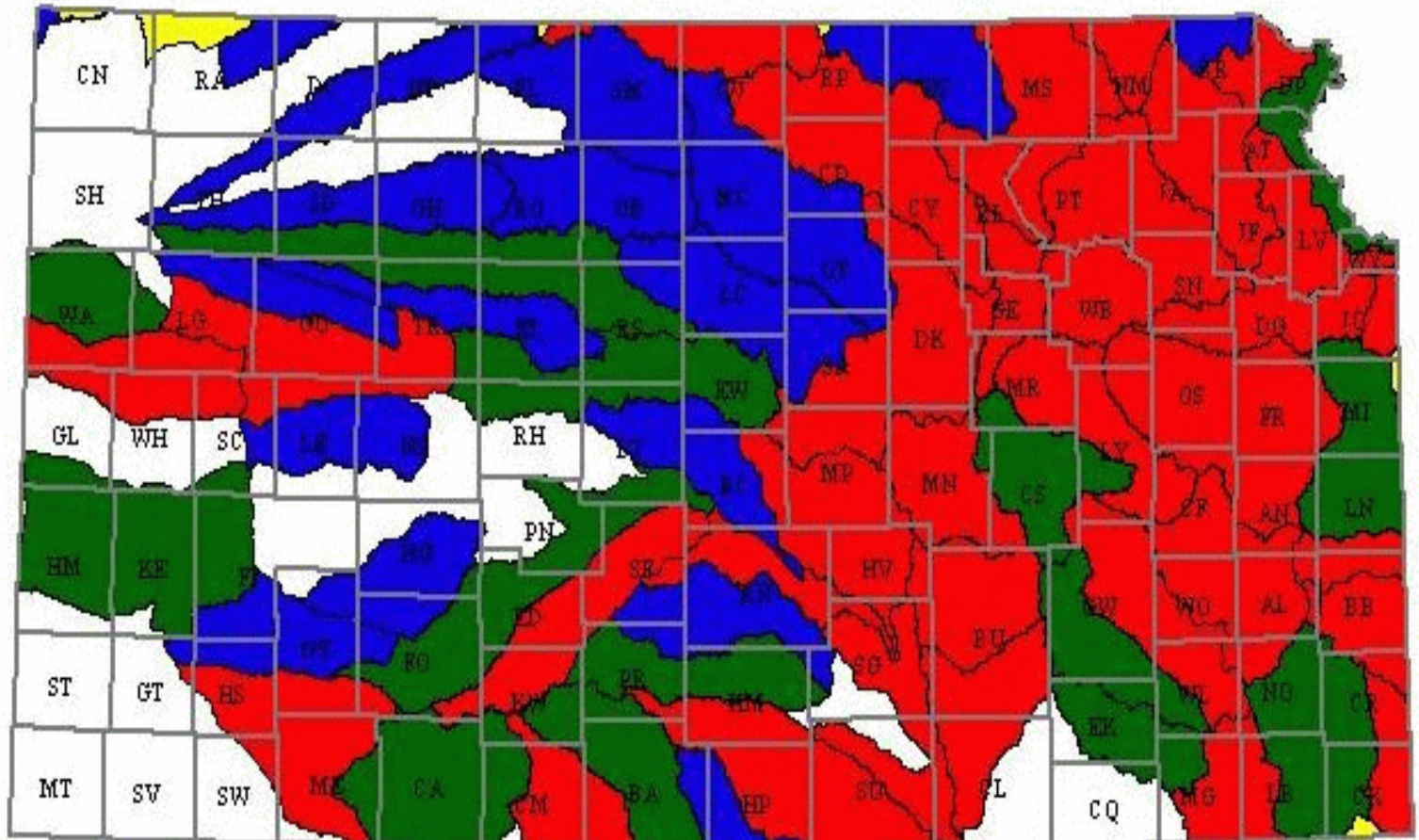
**Table 4 Kansas Clean Water Action Plan - Unified Watershed Assessment Category I  
Watersheds and Restoration Priority**

<b>Huc</b>	<b>Name</b>	<b>Water Quality Impairment Percent Miles Impaired</b>	<b>Priority Score</b>	<b>Watershed Restoration Priority Rank</b>	<b>Fiscal Year Funding Priority</b>
10270104	LOWER KANSAS	77.3	24	1	1999
10270205	LOWER BIG BLUE	76.2	23	2	1999
10270103	DELAWARE	51.5	21	3	1999
10270102	MIDDLE KANSAS	52.1	20	4	1999
10290101	UPPER MARAIS DES CYGNES	50.6	18	5	1999
11030013	MIDDLE ARKANSAS-SLATE	43.4	18	6	1999
11030014	NORTH FORK NINNESCAH	0.0	18	7	1999
11030003	ARKANSAS-DODGE CITY	100.0	17	8	1999
10240007	SOUTH FORK BIG NEMAHA	85.1	17	9	1999
10270207	LOWER LITTLE BLUE	79.3	17	10	1999
10250017	LOWER REPUBLICAN	57.1	17	11	1999
10290102	LOWER MARAIS DES CYGNES	9.9	17	12	1999
10240005	TARKIO-WOLF	67.1	16	13	1999
11030012	LITTLE ARKANSAS	66.8	16	14	1999
11030015	SOUTH FORK NINNESCAH	21.0	16	15	1999
11070207	SPRING	71.1	15	16	1999
10290104	MARMATON	61.6	15	17	1999
11030009	RATTLESNAKE	58.3	15	18	1999
11030010	GAR-PEACE	55.5	15	19	1999
11070204	UPPER NEOSHO	34.6	15	20	1999
10290103	LITTLE OSAGE	91.7	14	21	2000
10270101	UPPER KANSAS	80.4	14	22	2000

10260015	SOLOMON RIVER	78.5	14	23	2000
11070205	MIDDLE NEOSHO	22.8	14	24	2000
10240011	INDEPENDENCE-SUGAR	1.2	14	25	2000
11070103	MIDDLE VERDIGRIS	74.5	13	26	2000
11030011	COW	64.6	13	27	2000
11030006	BUCKNER	57.7	13	28	2000
11040007	CROOKED	54.6	13	29	2000
11060005	CHIKASKIA	28.1	13	30	2000
11030001	MIDDLE ARKANSAS-LAKE MCKINNEY	7.3	13	31	2000
10300101	LOWER MISSOURI-CROOKED	83.4	12	32	2000
10260010	LOWER SALINE	67.0	12	33	2000
10260012	LOWER NORTH FORK SOLOMON	56.8	12	34	2000
10260008	LOWER SMOKY HILL	54.1	12	35	2000
11070202	UPPER COTTONWOOD	41.6	12	36	2000
10240008	BIG NEMAHA	37.7	12	37	2000
11070201	NEOSHO HEADWATERS	27.5	12	38	2000
10260009	UPPER SALINE	15.4	12	39	2000
11030004	ARKANSAS-PICKEREL	5.8	12	40	2000
11060004	LOWER SALT FORK ARKANSAS	69.6	11	41	2001
11030018	LOWER WALNUT RIVER	39.2	11	42	2001
11070203	LOWER COTTONWOOD	22.5	11	43	2001
11030017	UPPER WALNUT RIVER	67.4	10	44	2001
10260014	LOWER SOUTH FORK SOLOMON	33.5	10	45	2001
11030007	UPPER WALNUT CREEK	33.3	10	46	2001
11060002	UPPER SALT FORK ARKANSAS	29.0	10	47	2001

10250016	MIDDLE REPUBLICAN - east	26.2	10	48	2001
11060003	MEDICINE LODGE	24.1	10	49	2001
11070102	FALL	22.3	10	50	2001
10260006	MIDDLE SMOKY HILL	15.4	10	51	2001
11040008	UPPER CIMARRON-BLUFF	13.3	10	52	2001
10270206	UPPER LITTLE BLUE	0.0	10	53	2001
10250001	ARIKAREE	100.0	9	55	2001
10250014	BEAVER	100.0	9	54	2001
10260007	BIG	82.5	9	56	2001
10250015	PRAIRIE DOG	35.0	9	57	2001
11070101	UPPER VERDIGRIS	28.0	9	58	2001
11020009	Upper Arkansas John Martin	0.0	9	59	2001
11070206	LAKE O' THE CHEROKEES (East)	39.3	8	60	2001
11070104	ELK	18.7	8	61	2001
10250004	UPPER REPUBLICAN	0.0	8	62	2001
10260004	LADDER	51.6	7	65	2001
10260003	UPPER SMOKY HILL	46.6	7	66	2001
10290108	SOUTH GRAND	0.0	7	67	2001
10250002	NORTH FORK REPUBLICAN	0.0	7	63	2001
11070206	LAKE O' THE CHEROKEES (West)	0.0	7	64	2001
10260005	HACKBERRY	33.2	6	68	2001
10260013	UPPER SOUTH FORK SOLOMON	7.4	6	69	2001
10260001	SMOKY HILL HEADWATERS	0.0	6	70	2001
10250009	Harlan Co (Neb) Res. - KS	0.0		71	2001

# Unified Watershed Assessment Basis of Classification



- Both
- Only Water Quality
- Only Other Resources
- Interstate Consistency
- Categories II and IV

## Data Sources:

Huc Boundaries - USGS  
Political Boundaries - KCD/KGS

Kansas Department of Health and Environment  
Bureau of Water  
Information Systems - GIS Unit  
November, 1998

This publication is for planning purposes only.

## **Comments or Questions**

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